

U.S.S.N.: 09/500,904
Filed: February 9, 2000
AMENDMENT

IN THE CLAIMS

Claims 1-5 (cancelled)

6. (twice amended) A diagnostic test to predict the risk of developing lupus comprising reagents which can be used to detect levels of antibodies to Epstein-Barr virus, indicators of Epstein-Barr infection of cells, or levels of Epstein-Barr DNA or protein in a patient, wherein the reagents used to detect antibodies to peptides from Epstein-Barr virus are peptides of up to forty amino acids in length comprising an amino acid sequence selected from the group consisting of PPPGRRP (SEQ ID NO:1), GRGRGRGG (SEQ ID NO:2), RGRGREK (SEQ ID NO:3), GAGAGAGAGAGAGAGAGAGAGAGA (SEQ ID NO:7), GPORRGDNHGRGRGRGRGRGGGRPG (SEQ ID NO:98), GGSGSGPRHRDGVRRPOKRP (SEQ ID NO:25), RPOKRPS (SEQ ID NO:26), OKRPSCIGCKGTHGGTG (SEQ ID NO:27), GTGAGAGARGRG (SEQ ID NO:99), SGGRG (SEQ ID NO:100), RGGSGGRRGRGR (SEQ ID NO:101), RARGRGGRGEKRP (SEQ ID NO:102), SSSSGSPRRPPPGR (SEQ ID NO:103), RPPPGRPPFFHPVGEADYFEYHOEG (SEQ ID NO:104), PDVPPGAI (SEQ ID NO:33), PGAIEQGPA (SEQ ID NO:34), GPSTGPRG (SEQ ID NO:105), GOGDGGRRK (SEQ ID NO:37), DGGRRKKGGWFGKHR (SEQ ID NO:38), GKHRGOGGSN (SEQ ID NO:106), GOGGSNPK (SEQ ID NO:107), NPKFENIA (SEQ ID NO:108), RSHVERTT (SEQ ID NO:109), VFVYGGSKT (SEQ ID NO:110), GSKTSLYNL (SEQ ID NO:111), GMAPGPGP (SEQ ID NO:46), POPGPLRE (SEQ ID NO:47), CNIRVTVC (SEQ ID NO:48), RVTVC SFDDG (SEQ ID NO:49), PPWFPPMVEG (SEQ ID NO:50) or the peptide consisting of GPORRGDNHGRGRGRGRGRGGGRPG (SEQ ID NO:98), or antibodies reactive with these peptides, and

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control samples from individuals not at risk of developing lupus, and means for determining the differences in levels of antibodies to Epstein-Barr virus, indicators of Epstein-Barr infection of cells, or levels of Epstein-Barr DNA or protein in of a patient and control samples to distinguish individuals at higher risk of developing lupus from those at lower risk of developing lupus.

7. (once amended) The diagnostic test of claim 6 wherein the reagents are used in assays selected from the group of assays based upon the relative presence of an antibody, assays based on cellular proliferation, assays based on molecular binding, assays based on cytokine production (twice amended) ~~The diagnostic test as claimed herein wherein the reagents used to detect antibodies to peptides from Epstein-Barr virus are selected from the group consisting of~~ antibodies to peptides from Epstein-Barr virus are selected from the group consisting of PPPGRRP (SEQ ID NO:1), GRGRGRGG (SEQ ID NO:2), RGRGREK (SEQ ID NO:3), GAGAGAGAGAGAGAGAGAGAGAGA (SEQ ID NO:7), GPQRRGGDNHGRGRGRGRGRGGGRPG (SEQ ID NO:98), GSGSGPRHRDGVRRPQKRP (SEQ ID NO:25), RPQKRPS (SEQ ID NO:26), QKRPSIGCKGTHGGTG (SEQ ID NO:27), GTGAGAGARGRG (SEQ ID NO:99), SGGRRGG (SEQ ID NO:100), RGGSGRRRGRGR (SEQ ID NO:101), RARGRRGRGKRP (SEQ ID NO:102), SSSSGSPRRPPPGR (SEQ ID NO:103), RPPPGRRPFFHPVGEADYFEYHQEG (SEQ ID NO:104), PDVPPGAI (SEQ ID NO:33), PGAIEQGPA (SEQ ID NO:34), GPSTGPRG (SEQ ID NO:105), GQGDGRRK (SEQ ID NO:37), DGGRRKKGGWFGKHR (SEQ ID NO:38), GKHRGQGSN (SEQ ID NO:106), GQGSNPK (SEQ ID NO:107), NPKFENIA (SEQ ID NO:108), RSHVERTT (SEQ ID NO:109), VFVYGGSKT (SEQ ID NO:110), GSKTSLYNI (SEQ ID NO:111), GMAPGPGP (SEQ ID NO:46), PQGPLRE (SEQ ID NO:47), CNIRVTVC (SEQ ID NO:48), RVTVCSDDG (SEQ ID NO:49), and PPWFPPMVEG (SEQ ID NO:50).

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10. (original) The diagnostic test of claim 6 for testing patients identified with or at risk of developing systemic lupus erythematosus comprising control samples from individuals with systemic lupus erythematosus.
 Claims 11-18 (cancelled)

19. (twice amended) A method for determining the likelihood that an individual has lupus induced by Epstein-Barr virus, or is at risk for developing lupus, comprising obtaining a sample from the individual to be tested, mixing the sample with reagents which can be used to detect levels of antibodies to Epstein-Barr virus, indicators of Epstein-Barr infection of cells, or levels of Epstein-Barr DNA or protein in a patient,

analyzing the sample, and

comparing the analysis of the sample with results obtained with control samples from individuals not at risk of developing lupus to determine if the differences in levels of antibodies to Epstein-Barr virus, indicators of Epstein-Barr infection of cells, or levels of Epstein-Barr DNA or protein in of the individual and control samples indicates the individual is at a higher risk of developing lupus than controls who are at lower risk of developing lupus.

20. (once amended) The method of claim 19 wherein the reagents are used in assays selected from the group of assays based upon the relative presence of an antibody, assays based on cellular proliferation, assays based on molecular binding, assays based on cytokine product~~ion, (assays based on)~~ ~~The method of claim 19 wherein the reagents are used to detect~~ antibodies to peptides from Epstein-Barr virus are selected from the group consisting of PPPGRRP (SEQ ID NO:1), GRGRGRGG (SEQ ID NO:2), RGRGREK (SEQ ID NO:3), GAGAGAGAGAGAGAGAGAGAGAGA (SEQ ID NO:7), GPQRRGGDNHGRGRGRGRGRGGGRPG (SEQ ID NO:98), GGSGSGPRHRDGVRRPQKRP (SEQ ID NO:25), RPQKRPS (SEQ ID NO:26), QKRPSIGCKGTHGGTG (SEQ ID NO:27),

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GTGAGAGARGRG (SEQ ID NO:99), SGGRGRGG (SEQ ID NO:100), RGGSGGRRGRGR
(SEQ ID NO:101), RARGRGRGRGEKRPRS (SEQ ID NO:102), SSSSGSPRRPPPGR (SEQ
ID NO:103), RPPPGRRPFFHPVGEADYFEYHQEG (SEQ ID NO:104), PDVPPGAI (SEQ ID
NO:33), PGAIEQGPA (SEQ ID NO:34), GPSTGPRG (SEQ ID NO:105), GQGDGGRRK (SEQ
ID NO:37), DGGRRKKGWFGKHR (SEQ ID NO:38), GKHRGQGSN (SEQ ID NO:106),
GQGSNP (SEQ ID NO:107), NPKFENIA (SEQ ID NO:108), RSHVERTT (SEQ ID
NO:109), VFVYGGSKT (SEQ ID NO:110), GSKTSLYNL (SEQ ID NO:111), GMAPGPGP
(SEQ ID NO:46), PQGPLRE (SEQ ID NO:47), CNIRVTVC (SEQ ID NO:48),
RVTVC SFDDG (SEQ ID NO:49), and PPWFPPMVEG (SEQ ID NO:50).

22. (original) The method of claim 19 wherein the individual is tested for the presence of
antibodies to GAGAGAGAGAGAGAGAGAGAGAGA (SEQ ID NO:7).

Claims 23-26 (cancelled).